





A BRIEF SURVEY
OF THE
OBJECTS OF GRAPHIC ART

EXHIBITED BY
THE IMPERIAL AND GOVERNMENT
PRINTING ESTABLISHMENT
AT VIENNA,

AT THE LONDON EXHIBITION,
1851.



LONDON:
SAMUEL BAGSTER AND SONS,
15, PATERNOSTER ROW.

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HAROLD BARNETT AND SONS,
PRINTERS, 11, FLEET STREET.

DESCRIPTION OF THE ARTICLES EXHIBITED.

ON entering the locality appropriated to this portion of the Exhibition, there will be perceived arranged upon the walls various objects of Art in frames; and upon the long side-tables a number of objects, in part uncovered, and in part enclosed in cases; the whole of which are the productions of the Imperial Establishment.

On the walls are first placed the six chromo-lithographs which have been executed expressly for the London Industrial Exhibition, namely:—Two Flower pieces, one Fruit piece, one still Life, one study of a Head, one *Genre* piece, and a Portrait of the Emperor Joseph II.

The original paintings are hung by them, for comparison of the fidelity of the colour printing.

Each original painting cost . . . 250 fls. C. M., equal to £25.

The copies in printed colours cost 30 kr. „ „ 1s.

Below on the table are placed impressions without varnish, to show the appearance of the printing when it leaves the press.

The impressions printed in single colour, which stand next, exhibit the manner in which the various colours have been combined. The point-holes, which may be perceived, are produced by a pin on the stone, by which the several colours are made to fit closely to each other.

Beyond these are seen specimens of printing in colours; the sixteen flowers from Hartinger's "*Paradisus Vindobonensis*." This work was at first published with plates coloured by hand, but the later edition has been produced by printing in colours.

At the lower end of the walls, on the left, are several chromo-lithographic drawings of diseases of the human skin, by Dr. Elfinger, which will be shown if desired.

We next see the artistic and scientific productions of the Establishment, printed in the course of the last two years for the Memoirs of the Imperial Academy. These include gorgeous butterflies, all sorts of petrifications, anatomical dissections, fragments of mosaic, splendid copies of mediæval art, copies of portions of rare codices, Roman arms and vessels, etc.

Next to these objects of Art are seen various photographic drawings which were executed last autumn, and some of them even in the shade. The frames in which these appear were produced by means of the galvanic process.

Arranged in little boxes, are placed galvano-graphic objects, which are produced in the following very peculiar manner: The painter, or the party drawing, paints his picture with the paint brush on a prepared copperplate. This is then placed in the galvanic apparatus, and an engraved plate is produced, upon which the rest of the process is executed. From the engraved plate thus produced, the impressions are printed. The original painting is thus as it were obtained from the very hand of the painter, without the aid of the engraver, who so frequently modifies the artist's design.

We now reach the department of Chemitypy, an application of science discovered by a native of Copenhagen, named Piil, and brought to perfection by him in the Imperial Establishment.

By this invention the copperplate style of engraving may now be obtained from raised surfaces, like woodcuts, instead of, as

formerly, from engraved plates. The impressions thus produced are printed at a printing press, which accelerates the production fifty times, and cheapens it in the same measure.

The process is as follows: A zinc plate is taken and covered with etching ground, the plate is then etched, and the surface covered with an easily fusible (negative) metal; the plate is then scraped so as to leave the metal in the hollow parts produced by the etching; the surface of the plate is then again etched to remove part of the zinc plate for the elevation of the design; the plate is now, like a woodcut, fit for printing. If the plate thus produced be multiplied by the galvanic process, millions of copies may be printed.

The visitor may now observe certain impressions from steel plates, executed by the first artists of Vienna in this department, as illustrations to several poems printed at the Imperial Establishment. Also several plates executed for special occasions,—as, the Card printed as a memorial of this Exhibition at the Imperial Establishment,—a Card printed at the opening of a railway, etc.

Leaving the auxiliary branches of the Imperial Establishment, we now arrive at its principal object—**TYPOGRAPHY**, with which is inseparably connected the extended knowledge of languages. In the Imperial Establishment the study of language is more prominently kept in view than in any other typographical institution extant.

A pedigree of the alphabets of the whole globe commences the series of typographical curiosities. On one hand from the Chinese characters, to which are added the Koreanic and Japanese characters, and on the other hand from the African hieroglyphic signs, which are immediately followed by the Phenician characters, which represent the first known signs of writing. All the rest of the alphabets take their origin from these, and then branch out into numberless ramifications which are traced up to the characters used throughout the world at the present day.

The most remarkable production in the field of foreign languages is presented by Auer's collection of the Lord's Prayer, printed with Roman type in 608 languages and dialects, the second section of which actually contains 206 languages and dia-

lects, *printed in the characters proper to the language of the respective nation.* To each Lord's Prayer printed with foreign types is appended a literal translation and key for the pronunciation of each separate letter, by which the work is accessible not only to philologists but to amateur students. Two tables containing the characters of all the languages of the whole globe conclude the second section of this great collection of the Lord's Prayer.

The Imperial Establishment thus surpasses the printing establishments of the whole globe with regard to its collection of foreign types; for here are not only represented all the foreign types printed in a tabular form themselves, but the original letter-punches are exhibited, in cases below on the tables, that the types may be compared with them if desired.

The combination of the Chinese characters develops a new invention of the highest interest. The 80,000 signs of that language are formed in the same manner as music is formed with movable type, according to the typometrical system of M. Auer, the Director of the Establishment. This system contains about 400 points and strokes; and although the trouble of joining these is taken into account, still the advantage of Gutenberg's invention of printing with movable types is manifestly of the greatest importance, when we consider the immense number of Chinese characters.

The Imperial Establishment is also provided with types for the use of the Blind of the European and Asiatic nations; by which a raised surface, for the purpose of reading by means of the fingers, is produced.

Next to the letter-punches, the matrices taken from them are exhibited. There is one alphabet of the Neschi (or so called Arabic-Turkish printing type), which was newly cut after some manuscript, and two alphabets of a larger and smaller sort of type produced by means of the galvanic process.

The spectator will further perceive a series of electro-galvanic objects, among which are some reliefs, which prove in the most striking manner the triumphs of electro-metallurgy in cases where the multiplication of objects is desired; whether they be flat, raised, or sunk.

Two most interesting objects here are the copies taken of some fossil fishes. The original was first incrustated with gutta serena. This crust was taken off, and, after being prepared, placed in the galvanic apparatus: a copy was thus obtained, without the aid of a drawing, which is quite fit for printing.

The system of Typometry, or the method of calculating and measuring the space taken up by each separate letter, will now claim attention. Not only is the advantage of being able to calculate by this system what space manuscripts will occupy when they are printed of great importance, but a still greater advantage attaches to this system, namely, that all sorts of tabular matter may now be much more easily arranged, because the space taken up by each separate column can be calculated to the greatest nicety: this is of great importance in a technical point of view.

Three thousand hundred weight or 150 millions of letters have been cast in the foundry of the Establishment according to this system.

In the composition of music with movable type, and in the composition of Chinese characters, this advantage is still more perceptible.

Upon the walls also is exhibited a work in the Japanese language, printed for the first time with movable type, and accompanied by a German translation of Dr. Pfizmaier. Though but little known in its native country, this edition has been translated in America, and is already in the press. The appearance of this Japanese novel caused a great sensation in foreign countries: the perfection with which the printing had been executed, actually created the doubt in the minds of the members of a German Society for the promotion of the Oriental Languages, whether the Japanese part and the illustrations of this work had not been executed at Japan, and the German part only at Vienna.

This judgment, pronounced by connoisseurs, is sufficiently flattering to the Imperial Establishment.* But, as a proof of its

* Journal of the Oriental Society, vol. i., parts III. and IV., 1847. (Leipsic, Brockhaus and Avenarius.) Being unable to decide on the philological merit of the book,

having been executed at the Establishment, a zinc plate, etched after the original, and a specimen of the composition with movable Japanese types, have been added to the objects exhibited on the present occasion.

Below the objects illustrative of Typometry are specimens of different languages, printed on folio sheets. These commence with the German language of the present day; then follow the letters used for printing during the middle ages, the forms of which are represented by movable types to the sixth century. The series progresses until we meet with the Gutenberg types, the gradual development of the character of the letters used at the present day being distinctly shown. A folio page of the Gutenberg Bible in a frame has been imitated with types which bear a most deceptive resemblance to the original, so that the original can scarcely be distinguished from the copy.

Just as the Imperial Establishment, when printing Oriental works, attempts their execution in the taste of the nation for whom, and according to the period of time in which they are printed, so also it has regard to the requisite form of the letters. The works thus imitated are printed with types appropriate to the century or period to which they belong. In this respect the Im-

we turn so much the rather to the artistical execution of it, which appears to have been produced by witchcraft. At the first view a sceptical critic might be led to suppose that a little mystification had taken place with regard to the printing of this work, that the honourable Imperial Establishment had bought the original edition at Japan, from which place it was also furnished with the paper on which the German translation had been printed, and that then it had both parts bound together. But no! this fine, satin-like paper is of German manufacture; these Japanese characters, which with their arabesque-like scrolls resemble the productions of transient stenography; and these printed illustrations, with physiognomies, costumes, buildings, and utensils, which seem to belong to a different world—they were not produced by woodcutting at Jedo, but have been closely copied at Vienna, from the originals, by means of typography and zinc-lithography. That is, the Japanese characters have been printed, for the first time, with movable type of unequalled beauty, and the illustrations, together with some explanations belonging to them, and the preface, have been engraved on zinc; proofs of them were then pulled on paper, after which they have been transferred on stone. In this proceeding we recognise the motto of the Imperial Establishment—"Nil actum reputans, si quid superesset agendum."

perial Establishment follows the principles of the great teacher and inventor, Gutenberg. The rules which guide the artist or learned historian, when representing an historical picture, apply with equal force to typography.

Next to the German specimens of different centuries we find those in foreign languages, from the Ethiopic and Amharic to the Zend, arranged in alphabetical order, whilst the two tables placed in frames next to the collection of the Lord's Prayer represent the characters of the different languages.

From the oldest specimen of printing of the Gutenberg Bible we arrive at the department of Woodcut Printing, otherwise called Xylography. The most ancient woodcuts occupy the first place, and lead us to the different coats of arms, to Albrecht Dürer's triumphal gate, the cuts of which have been collected, with the exception of a very few, by the Imperial Library. The woodcutting department of the Establishment has undertaken to complete these woodcuts, in order to have them in readiness if a reprint of them should ever be required. A number of initial letters and whole alphabets of the seventeenth century, also a number of seals, are here arranged. Various modern drawings, landscapes, figurative and historical pictures form the continuation. Several larger woodcuts, especially some religious objects, the originals of which were drawn on wood by Professor Führich, claim the particular attention of the visitor, as they are executed with especial skill.

Next to these upon the tables we see moulds of gutta percha, and others produced by the galvanic apparatus, intended to spare the original woodcut during the printing. Millions of impressions may be taken, in case of need, from the copperplate thus gained.

From the department of Wood-cutting we turn again to the Printing in colours, by which the most various ancient religious objects of the ninth to the thirteenth century inclusive are reproduced in all their splendour.

Geometrical drawings of floors, as well of modern times as from ancient mosaics, and objects of natural history form the continuation. Butterflies, petrifications, and anatomical subjects form the conclusion of this series. Upon the table next to the specimens in

foreign languages are various pamphlets and books, which, mostly being destined for the East, are executed in Oriental taste. These copies were printed for the Literati of Austria and of other countries.

The flattering judgment already pronounced by several journals edited by learned men as to the typographical perfection with which these works are executed, will not fail to stimulate the Establishment to still greater efforts.

Several works in foreign languages are now in course of printing for Christiania, Copenhagen, Erlangen, and Leipsic.

A LIST OF
OBJECTS EXHIBITED

BY THE
IMPERIAL AND GOVERNMENT PRINTING
ESTABLISHMENT AT VIENNA

AT THE
LONDON EXHIBITION, M.DCCC.LI.

WITH THE EXCEPTION OF THE SIX CHROMO-LITHOGRAPHIC PLATES, THESE
VARIOUS OBJECTS HAVE NOT BEEN EXECUTED EXPRESSLY FOR
EXHIBITION, BUT FOR THE ILLUSTRATION OF VARIOUS
WORKS AT DIFFERENT TIMES.

PUNCH-CUTTING DEPARTMENT.—Steel punches of foreign characters only. Of these the Imperial Establishment possesses 104 alphabets of the languages of the whole globe, without reckoning the different sizes in which many of the alphabets have been cast.

Punches of types used for books printed in the middle age; from the sixth to the sixteenth century inclusive. Types for the use of the Blind of Europe and Asia.

THE ALPHABETS ARE AS FOLLOWS:

Hieroglyphic.	Etrurian.	Western Grotto in-	Tamul.
Hieratic.	Ancient Italian.	scription.	Malayalim.
Demotic.	Runic.	Agoka inscription.	Cingalese.
Ethiopic and Amharic.	Gothic.	Inscription of Guzerat.	Maldivian.
Himyaritic.	Celtic.	Dynasty of Gupta (Al-	Javanese.
Himyaritic (ornamen-	Celtic (new shape).	lahabad).	Kiousa.
ted).	Anglo-Saxon.	Bengali.	New Pali (No. 1).
Cabylic, American in-	Ancient Greek.	Ahom.	New Pali (No. 2).
script., Touaric and	Greek.	Tibetan.	Siamese.
Thugga.	Coptic.	Passepa.	Kamboga (with joints
Ancient Hebrew.	Cyrillic.	Kutula (ten years after	and without).
Samaritan.	Cyrillic (differently	Christ).	Laos.
Hebrew.	shaped).	Devanagari (Sanscr.	Birmese.
Raschi, or Rabbinic.	Russian, Servian, Wal-	No. 1).	Shyan.
German Hebrew.	lachian.	Devanagari (Sanscr.	Bugis.
German Raschi.	Glagolitic.	No. 2).	Bisaya.
Hebrew, Spanish-Le-	Albanian.	Kashmerian.	Batta.
vantine.	Albanian (differently	Sikh.	Tagala.
Aramaic.	shaped).	Assam inscript.	Mongolese.
Chaldee.	Lycian.	Mahratta.	Mandschu.
Palmyric.	Armenian.	Orissa.	Chinese.
Estrangelo.	Georgian.	Gujeratee.	Coreanic.
Syriac.	Georgian (ecclesiast.	Kayti-Nagari.	Formosan.
Cufic.	letters).	Randscha.	Japanese (Katakana,
Arabic, Neschi.	Persepolitan cuneiform	Bandschin-Mola.	No. 1).
Mauritanic.	letters.	Multan.	Japanese (Katakana,
Phenician.	Pehlvi.	Sindhee.	No. 2).
Phenician (ornamen-	Zend.	Nerbudda.	Japanese (Firokana).
ted).	Cabool.	Kistna.	Tschirikisian.
Punic.	Peguan.	Telinga.	
Numidian.	Oldest Ind. signs.	Karnata.	

XYLOGRAPHY.—Three large woodcuts, after religious historical drawings by Führich, together with impressions of them in gutta percha, and matrices produced by means of the galvanic process; also specimens of historical and several other representations. A collection of seals, and several woodcuts after Albrecht Dürer.

CHEMITYPY.—Representations of the different departments of the Imperial Establishment, etched on zinc, chemityped, and printed with the common printing press;—a new invention by Piil, for etching on zinc in a raised manner.

LETTER FOUNDING.—Matrices of the newly-cut Neschi or Arabic-Turkish characters, used for printing; also several specimens of matrices produced by the galvanic process. Composition of a Chinese text with movable types, which consist of 400 signs, lines, and points, by which almost all the Chinese characters may be formed. A Specimen, showing the composition of Japanese with movable types, for comparison with music, which is also composed with movable types.

STEREOTYPING DEPARTMENT.—The types of the characters of the entire globe, two large tables, each of 540 square inches, stereotyped in type metal, together with gutta percha and plaster of Paris matrices, also copies of them produced by the galvanic process.

ELECTRO-METALLURGY.—Raised and engraved plates of woodcuts and objects of typography and chalcography.

Copy of two petrifications of the fishes *Pycnodus Fenzlii* and *Chirocentrites Coroninii*.

A large plate 33 feet long and $2\frac{1}{2}$ feet broad. On account of the difficulty of transporting this, the plate is very thin.

Three large tables of copper matrices, each of which contains 1200 Chinese characters.

Two large plates of 1800 square inches each, for copperplate printing or polishing.

Several gutta percha matrices for the use of this department of science. Refuse of copper used in the electro-galvanic process, stretched, rolled, beaten, etc., to show the quality of the same.

Works of sculpture from the antique (high reliefs and low reliefs), etc. electrotyped in copper.

Several metal frames, produced by the galvanic process, containing photographs.

The stereotype plates are of galvanic copper.

TYPOMETRY.—Illustrations of the system of calculating and measuring off the space taken up by the respective letters; by the Director of the Imperial Establishment, Alois Auer, government counsellor, and member of the Imperial Academy of Sciences. (An explanation of this system has been printed in the memorials of the Academy, volume 1.)

TYPOGRAPHY.—Some of the specimens of printing of the Imperial Establishment — as, German, Roman, and Italic types, the punches of which were cut in the Establishment. Likewise all the script and ornamental letters which are in use on the European continent.

Printed texts of the foreign characters of the whole world, some of them of various sizes.

German letters used for books during the middle ages, from the sixth century to the invention of the Art of Printing.

The type of the first printed work, Gutenberg's Bible, in four different sizes.

Ornamental letters copied from originals of the seventeenth century.

Types for the use of the Blind, in the European and Asiatic languages.

TYPOGRAPHICAL PRODUCTIONS IN GLAZED FRAMES. — "The Hall of Languages," published by the Director of the Establishment, A. Auer, government counsellor.

First Part,—The Lord's Prayer in 608 languages and idioms, printed with Roman type. With their respective interpretation. In nine tables.

Second Part,—The Lord's Prayer, printed with the characters appropriate to the respective nations, containing 206 varieties of language and a survey of more than one hundred foreign alphabets and characters, with transcriptions. In eight tables.

Development of the literal characters of the whole globe, in a genealogical form.

The Gutenberg Bible, of which a page contains forty-two lines, with painted ornamental border.

IN THE PORTFOLIO.—Types of the Propaganda at Rome, in 23 alphabets.

Bodoni's "Oratio Dominica," 28 alphabets.

The foreign types of France, from Falkenstein's History of the Art of Printing, 42 alphabets.

The foreign types of Germany, after Ballhorn, 19 alphabets.

The types of India, 13 alphabets.

Pedigree of the Emperors of Austria.

Ground plan sketches of the whole of the Imperial Establishment.

Two smaller portfolios contain an album in sixteen languages, printed for particular occasions.

PRINTED BOOKS IN ORDINARY BINDING.—Memorials of the Imperial Academy of Sciences, 1 volume. Objects illustrative of the sciences of mathematics and natural history. To this is added a map of 58 tables, executed in coloured lithographs.

Memorials of the Imperial Academy of Sciences, 1 volume. Objects illustrative of philosophy and history. With 12 lithographed tables.

The typometrical system of the Director of the Establishment, Alois Auer.

Hammer-Purgstall, Rhetoric of the Arabs, 1st volume.

Treaties between Austria and Turkey, Turkish, with a translation.

Pfizmaier's Arabic-Persian-Turkish Grammar.

Pfizmaier's edition of "The Four Screens," a Japanese novel, with a German translation. For the first time printed with movable Japanese types.

Schlecht, Abdurrahman Dschami's "Frühlingsgarten," Persian and German.

Schlecht, "The Right of Nations in time of War and in time of Peace," 2 volumes, translated from the German into Turkish.

A Treatise on the higher Arithmetic, Turkish.

Boller's Sanscrit Grammar.

Catalogue of the Hebrew Manuscripts in the Imperial Library at Vienna.

Goldenthal, Clavis Talmudica, Hebrew.

Arneth, Cabinet of Coins and Antiquities.

Bolza, Manuale.

Kohlgruber, Hermeneutica.

Statistics and Tables of Commerce of the Empire of Austria, 9 volumes in folio.

History of the Austrian National Bank.

Lira del Popolo, 2 parts, for the use of singing-masters.

Hoven, Heine's Songs, one volume in 4to. printed with movable types for music.

(*In the Press.* Printed with the original types.) For Dr. Mehren of Copenhagen—Rhetoric of the Arabs.

For Dr. Holmboe of Christiania—Comparative Knowledge of Languages.

For Dr. Zenker of Leipsic—Turkish Chrestomathy and Dictionary.

For Dr. Spiegel of Erlangen—Zend-Avesta, by Zoroaster.

Diplomatarium of the Monastery at Kremsmünster, printed with the types appropriate to the respective centuries.

CHROMO-LITHOGRAPHY. (By Hartinger.)

Two Flower pieces.

One Fruit piece.

One Head for study.

One still Life.

Genre-picture, representing the Emperor Joseph II., who prescribes 100 ducats as medicine to a widow who is dying of hunger.

N.B. The original oil paintings are hung up next to them, in order that they may be compared at pleasure with the printing in colours. The original painting cost 250 fls. C. M., (£25) whilst the copy printed in colours was produced at the cost of 30 kr. C. M. (1s.)

Flowers (16 plates). For the work, "Paradisus Vindobonensis."
Butterflies, petrifications, plants, objects of architecture, etc.

TO BE SHOWN ONLY ON REQUEST. Remarkable diseases of the human skin, six sheets.

COPPERPLATES AND STEEL ENGRAVINGS. Illustrations for works, and cards printed on particular occasions.

GALVANOGRAPHY. The Departure. Executed on copper by Schindler, etched by Axmann, copied by means of the galvanic process, and printed at the Imperial Establishment. There is subjoined, for comparison, the original as well as the copy produced by the galvanic process, and proofs pulled before the etching of the plate.

ORNAMENTAL DEPARTMENT. Original drawings in the Oriental and Occidental styles, executed for works printed for the East and West.

ORNAMENTAL TOOLS FOR BOOKBINDERS. Different ornaments exhibiting the Oriental and Occidental styles.

PHOTOGRAPHY.

(By Paul Pretsch.)

Views of Schönbrunn (the usual summer residence of the Imperial court) and of Vienna.

View of a garden.

Neptune group.

Gloriette (an elevated point, from which a most extensive view is enjoyed), (Schönbrunn).

Entrance with the Obelisk of trophies.

Entrance to the Gloriette.

Interior of the Gloriette.

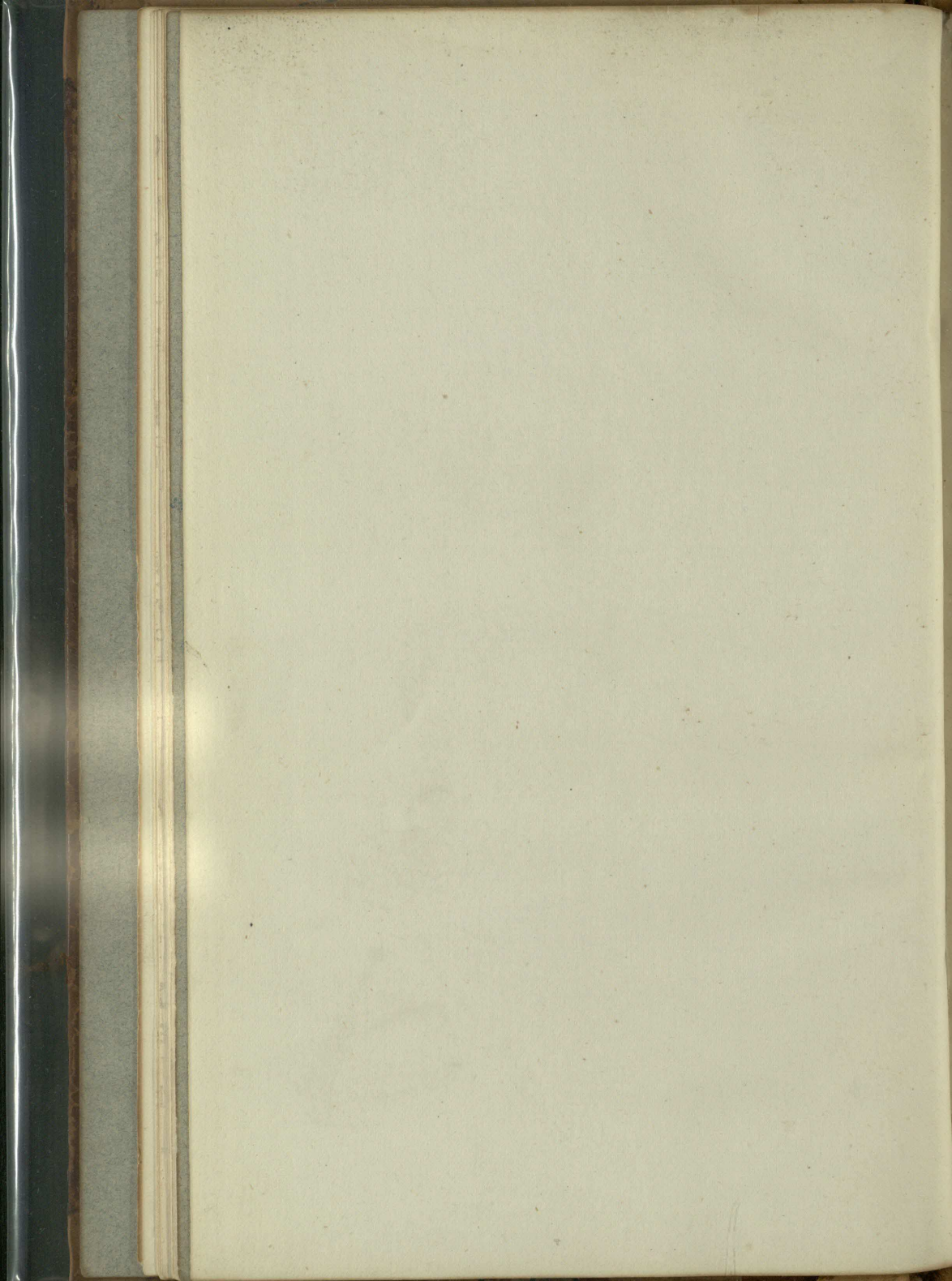
Two large Heads.

Head of Christ.

Two Heads, Niobe and Caracalla.

A courtyard in the suburb Neubau.

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